



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Inventors: Naoyasu MIYAGAWA, et al. Art Unit: 2655
Appln. No.: 09/460,221 Examiner: N. Hindi
Filed: December 13, 1999
For: OPTICAL RECORDING/REPRODUCING APPARATUS FOR
OPTICAL DISKS WITH VARIOUS DISK SUBSTRATE
THICKNESSES

SUPPLEMENTAL REPLY BRIEF

This appeal was remanded to the examiner on September 16, 2003, for the purpose of reconsideration of the recapture rejection in light of the precedential Board decision in *Ex parte Eggert et al.*¹ decided May 29, 2003 by an expanded panel of the Board of Patent Appeals and Interferences. This Decision illuminates various CCPA and CAFC decisions cited in the Answer, such as *Hester Industries*, *In re Clement*, *Ball Corp.*, *Pannu*, and *Mentor*.

The Supplemental Examiner's Answer (hereinafter, "Answer") of January 24, 2005, addresses various issues in addition to those raised by *Eggert*.

This Supplemental Reply Brief addresses the points of argument asserted in the Answer, which include (1) reassertion of various arguments made in the first Examiner's Answer, (2) arguments

¹67 USPQ2d 1716 (BPAI 2003); hereinafter, "*Ex parte Eggert*," "*Eggert et al.*" or "*Eggert*" refers to this decision and not the earlier board decisions also involving *Eggert et al.*

directed to the rule of *In re Wesseler*², which was asserted in Appellants' Main Brief of January 15, 2003 and Reply Brief of July 31, 2003, and (3) the issues of this appeal in light of *Eggert*.

I. REBUTTAL OF REASSERTED ARGUMENTS FROM FIRST EXAMINER'S ANSWER

The Section of the Answer at page 4, line 12 - page 13, line 12, reasserts various arguments made in the first Examiner's Answer.

At the outset, it is noted that page 17, line 3 et seq. of the Answer apparently cites a version of the MPEP that has been superseded. The quoted paragraph does not appear in the current on-line version of MPEP 1412.02. Further, the Answer states that "the examiner followed the examples set forth in section 1412.02 of the MPEP" but without citing which examples were followed (Answer, page 17, lines 8-9). It seems clear that the MPEP version that the examiner employed was the version prior to re-writing in view of *Eggert*.

At page 17, line 14 et seq., the Answer misconstrues Appellants' argument at page 36, line 28 through page 37, line 19 of the main Brief, by alleging that Appellants argued that newly added limitations cannot be considered even in combination an

²367 F.2d 838, 151 USPQ 339 (CCPA 1966)

aspect germane to a prior art rejection. However, this was not at all what Appellants argued. Instead, Appellants stated:

The arguments below are summarized as follows. Each of the elements of original claim 1 were included in each patent claim. Thus, these elements are not germane to the prior art rejection and may be broadened or omitted under *In re Clement*. Further, in the present case, there is no individual limitation that, standing alone, was identified in the prosecution history as distinguishing over the prior art, but rather various combinations of elements were so identified. As a result, at most, the combination of patent claim elements not found in original claim 1 is germane to the prior art rejection, and the "aspect" under *In re Clement* is the combination of elements particular to each of the patent claims that is not found in claim 1.

Accordingly, the present reissue claims avoid recapture so long as such combination of elements is narrowed even though they are also broadened. In other words, since, as noted above, none of the individual elements of the present patent claims is germane by itself to a prior art rejection, but at most a combination of such elements is germane, under *Clement*, any aspect of such combination of elements may be broadened or omitted so long as some aspect of such combination of elements is also narrowed. Such narrowing results in a claim that is not as broad as or broader than canceled claim 1 or canceled claim 6 and thus will avoid the recapture bar.

It is clear that the Answer completely misconstrues Appellants' argument and makes it the converse of what was actually argued.

Page 17, line 24 et seq. repeats an assertion in the first Answer that "there is no category (c) in *In re Clement*." However, this same point was already addressed in the first Reply Brief,

noting that *Ex parte Baudin*, Appeal No. 2001-1042, Application No. 09/292,334, BPAI, June 13, 2001, and *Eggert* both recognize this category. Clearly, this category (c) is very reasonably implied from *Clement*.

II. THERE IS NO SURRENDERED SUBJECT MATTER BASED ON THE PRECEDENTIAL CCPA DECISION OF *IN RE WESSELER*

The issues controlled by *Wesseler*, were discussed in detail in the Main Brief filed January 15, 2003 and the Reply Brief filed July 31, 2003. The comments below supplement the previous discussions and address new points of argument in the Answer.

The Answer asserts various points concerning the prosecution of the parent application.

In such prosecution, the Appellants originally filed independent claim 1 and claims 2-29 dependent therefrom. In the first office action dated August 17, 1992, the examiner rejected claims 1-29 under 35 USC §112, second paragraph, as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Additionally, the examiner rejected claims 1 and 6 over prior art, and stated that claims 2-5 and 7-30 20 "would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims."

In said first office action, at page 2, lines 13-24, the examiner stated that certain specific aspects of claims 1, 2 and 4-9 were unclear. Specifically, the examiner stated:

"Claim 1 recites "N converging means whose ... thickness;". However, it is not clearly recited according to what structural element or means the aberrations had been corrected.

Claims 2 & 4-9 "disc discrimination means". Is the above means the same as the one in claim 1 and if not what is the difference?

Claim 4 recites "control means for selecting the light emitting means". It is not clear whether the selection means selects one of the objective lenses or one of the light beams?

Claim 6 & 7 also recites "--in accordance with a control signal". However, the claims fails to recite the source of a control signal.

In the sole Amendment after the first office action, the Appellants took steps to place the application in condition for allowance, in accordance with the indication of allowable subject matter in the office action. Thus, the applicants canceled claims 1 and 6, which were rejected under 35 USC 112, second paragraph, and under 35 USC 103, and rewrote the remaining claims to place them in condition for allowance (except for claims 11, 16, 21, and 26 which depended from one of canceled claims 1 and 6 and were now duplicates of other dependent claims that were maintained). Claims 2, 4, 5, and 7-9 were, as stated in the Remarks accompanying the amendment, "rewritten in independent form and also amended to overcome the §112, second paragraph, rejections."

Specifically, Appellants said in the Amendment:

The Applicants acknowledge with appreciation the indication ... that claims 2-5 and 7-30 are directed to allowable subject matter. Only claims 1 and 6 are rejected on art; claims 1 and 6 are hereby canceled. In addition, claims 11 and 21, dependent from claim 1, are also canceled, while claims 16 and 26, dependent from claim 6, are canceled.

Claims 2, 4, 5 and 7-9 have been rewritten in independent form and also amended to overcome the §112, second paragraph, rejections. Regarding claim 4, the applicants note that the control means selects one of a plurality of light emitting means which are associated with the converging optical systems. By selecting one of the light emitting means, an aberration caused by the difference of the disk substrate thickness is minimized. Regarding claims 6 and 7, the control means is defined as generating a control signal which is provided to the selecting means in accordance with the discrimination signal. Regarding the issues raised in the office action concerning claim 30, it is noted that this claim depends indirectly on claim 9, and the "N converging grating couplers" are defined in claim 9. It is respectfully submitted that all pending claims are now in full compliance with §112 and are in condition for allowance.

In view of the 35 USC 112, second paragraph, rejection of claim 1, it was necessary to make claim amendments not only to rewrite the claims in independent form, but also to revise the claims to overcome the indefiniteness rejections. This required revision of the language of claim 1, as well as that of the allowable dependent claims. Further, in an attempt to explain to

the examiner the meaning of certain claim terms questioned in the above-cited portion of the office action, the Appellants, at page 9, lines 13-27 of the Amendment, provided an explanation of the meaning of the "selection" provided by the control means of claim 4 specifically queried by the examiner, and the control signal of claims 6 and 7, also queried by the examiner. These comments were directed to overcoming the 35 USC 112, second paragraph, rejection, and not to overcoming a non-existent prior art rejection of the claims rewritten in independent form as alleged in the present Answer. Finally, the Appellants ended this paragraph by stating "[i]t is respectfully submitted that all pending claims are now in full compliance with §112 and are in condition for allowance."

Accordingly, it is submitted that said Amendment clearly lacked any comments or arguments that could be deemed directed to prior art rejections. Moreover, the record provides no indication whether the cancellation of claims 1 and 6 was to obviate the indefiniteness rejection or the art rejection.

The present facts are virtually identical to those of *Wesseler*.

In the present case, as in *Wesseler*, all claims stood rejected as being vague and indefinite, and certain claims stood rejected on art. That is, in *Wesseler*, claims 11, 12, 20, and 21 were rejected over a patent to Simmonds, and in Appellants' case, claims 1 and 6

were rejected over prior art. Then, certain claims were canceled, and the application was allowed. In *Wesseler* and the present case, the PTO alleged improper recapture. Also, in both *Wesseler* and the present case, the PTO alleged, either expressly or impliedly, that the Appellants had acquiesced to the art rejection and thus surrendered the subject matter of the canceled claims.

However, the CCPA stated in *Wesseler* that "[i]nsofar as the act of cancelling claims is concerned the record does not show whether this was an admission that those claims were unpatentable over the prior art or whether they were cancelled and the amended claims were submitted to cure the 'vague and indefinite' rejection." *Id.*, at 345, 346.

Similarly, the record of the present application is devoid of any indication that the Appellants' cancellation of claims 1 and 6 was an admission that those claims were unpatentable over the prior art.

Under the CCPA's decision in *Wesseler*, the burden of proof is on the Office to establish that claim cancellations or amendments were for the purpose of overcoming a prior art rejection. This is binding legal precedent for the present situation. The rule applied to the *Wesseler* situation should be similarly applied to the present situation.

Applying *Wessler* to the present case, the Appellants' prosecution of the parent case involved no surrender invoking the recapture rule because the prosecution history and claim amendments and cancellations fail to support any inference as to whether original claims 1 and 6 were canceled to overcome a prior art rejection or to obviate a 112, second paragraph, rejection.

At page 14, lines 23-26, the Answer recognizes that the Appellants, in said Amendment, argued that the claim amendments were made to overcome a rejection of all the claims under 35 USC 112. In other words, the Answer acknowledges that the Appellants arguments were directed to the 35 USC 112 rejections. However, at page 14, lines 26-32, the Answer notes that the Applicants' comments in said Amendment addressed limitations that defined the claims over the prior art. However, as noted above, the sole statements in the Amendment explained how the amendments to various claim elements overcame the Section 112 rejection. The illogic of the position taken in the Answer is clear because the allowable claims that were rewritten in independent form were never rejected on art, but it was necessary to amend and discuss the claim elements whose definiteness was questioned by the examiner, in order to explain how the indefiniteness rejection was overcome.

The Answer further asserts that "...the Examiner identified the allowable claims because they defined over the prior art, and

applicants did not refute the Examiner's conclusion." (Answer, page 14, lines 28-29). However, *Wessler* requires no such refutation, but rather places the burden on the Office to cite something in the record showing that the cancellation of claims 1 and 6 was for a reason other than to overcome the indefiniteness rejection. Here, the Answer utterly fails to meet this burden.

In summary, the Appellants submit that the Answer has failed to meet the burden of proof that the claim amendments in the parent application were for the purpose of overcoming the prior art and not for overcoming the indefiniteness rejection. In fact, there was no amendment or argument for the purpose of overcoming a prior art rejection in the original application, and, for at least this reason, there was no surrender under *In re Clement*, 131 F.3d 1464, 45 USPQ2d 1161 (Fed. Cir. 1997) and *In re Wessler*, 367 F.2d 838, 151 USPQ 339 (CCPA 1966).

III. EVEN IF SURRENDER OCCURRED, THERE IS NO RECAPTURE OF SURRENDERED SUBJECT MATTER UNDER EGGERT ET AL.

The discussion of Eggert from the first Reply Brief is reiterated in full. The following addresses new points asserted in the Answer of January 24, 2005.

In the Section beginning at page 18, line 19, the Answer addresses *Eggert et al.* Although the Answer asserts that *Eggert* is not on point as to the present appeal, this assertion is

unwarranted in view of the principles underlying the *Eggert* decision. As discussed below, the principles elucidated by *Eggert* are directly on point and compel a finding of no reissue recapture in the present case.

In sum, the Answer applies a *per se* recapture rule that a reissue application cannot completely delete a limitation added during prosecution of the parent application to patentably define over the prior art. However, this *per se* rule is directly contrary to the rules enunciated by *Eggert*, as specifically shown in the discussion below.

Eggert follows the three step *Clement* test:

(1) compare the reissue claims with the patent claims to determine whether and in what aspect(s) the reissue claims are broader than the patent claims;

(2) determine whether those broadenings relate to surrendered subject matter; and

(3) compare the reissue claims to the surrendered subject matter to determine in what aspects the reissue claims are broader than the surrendered subject matter and in what aspects the reissue claims are narrower than the surrendered subject matter.

Eggert defines the surrendered subject matter as the claim prior to the amendment that resulted in allowance and issuance, and

not the area intermediate of the claim prior to the amendment and the issued claim (See, *Eggert*, page 41, lines 18-19).

Eggert defines "germane" narrowings as limitations that define the claimed subject matter over the applied art (See, *Eggert*, page 42, lines 5-7).

Eggert expressly rejects a *per se* recapture rule that, after a limitation is added/argued to distinguish over applied prior art, any reissue claim which does not contain that limitation is *per se* impermissible. Instead, *Eggert* states that, while a canceled claim is clearly surrendered, the area intermediate between the canceled or amended claim and the issued claim is not surrendered. Giving examples, the Board states:

For example, if an outer circle claim contains elements ABC and the inner circle claim contains elements ABCDEF, a reissue applicant cannot recapture a claim directed to elements ABC (outer circle) or a claim entirely outside the outer circle (e.g., AB, BC, ABC_{BR2}, etc.). However, it is our view that the reissue recapture rule is not invoked for claims directed to elements ABCX, ABCD_{BR}, ABCEF, A_{BR}BCDEF. In other words, the focus for determining the reach of the reissue recapture rule should be the claim from which the issued claim directly evolved, not the issued claim itself. We believe that this is where we and the members of the dissent disagree. *Ex parte Eggert et al.*, page 6.

Example ABCX, which completely omits elements DEF added during prosecution, clearly refutes any *per se* recapture rule that a

limitation added/argued to distinguish over applied prior art must be present in any reissue claim to avoid impermissible recapture. Of course, under the above-noted *Eggert* definition of germane narrowing, element X must impart patentability to constitute a "germane" narrowing that defines the claimed subject matter over the applied art.

The Answer ignores example ABCX. That is, the Answer states at page 20, line 3 et seq. that, during prosecution of the parent application, the Appellants added limitations "X, Y and Z" into their claims. The Answer deems these as "surrender-generating limitations." The Answer asserts at page 15, lines 23-25, that *Eggert* is not applicable to the facts of the present appeal because the present claims omit "surrender-generating limitations."

However, the Appellants submit that, under *Eggert*, "X, Y and Z" (deemed added limitations by the Answer)³, may be omitted in the reissue claims, just as added elements DEF are omitted in the above-noted example from *Eggert*.

The Appellants note that the current on-line version of MPEP 1412.02, page 1400-19, column 2, is in conflict with *Eggert's* example ABCX. This section of the MPEP states that where, during

³This assertion in the Answer is incorrect because the discrimination means was originally present in original claims 1 and 6, as well as all the claims that were placed in independent form, and thus was not an added limitation.

original prosecution, AB was amended to yield ABC to distinguish over applied prior art, reissue claims directed to ABD constitute recapture, where D is not related to the surrendered subject matter.⁴ But this MPEP example is contrary to the rule of Eggert's example ABCX. Under Eggert, there is no requirement that X be related to the surrendered subject matter, but instead, if X constitutes a narrowing that patentably distinguishes the claimed subject matter over the applied art, there is no recapture. Moreover, example ABD of the MPEP is clearly in the shaded area of Eggert's concentric circle illustration and thus does not constitute recapture.⁵

⁴The MPEP considers the "surrendered subject matter" to be an "original patent claim limitation ... relied upon ... to make the claims allowable over the art...." See, MPEP 1400-16, col. 1, lines 6-10. But Eggert clearly deems the surrendered subject matter to be the claim prior to the amendment that produced the patent claim, rather than the "shaded area" intermediate of the claim prior to the amendment and the issued claim (See, Eggert, page 41, lines 18-19). Yet even applying the MPEP position that the germane narrowings must relate to the features added or argued to impart patentability during prosecution, there still would be no recapture here, because such narrowing amendments exist in the present claims. The Appellants reiterate that, as discussed at page 45 of the main Brief, in the present circumstances, the "aspect" germane to the prior art rejection is defined by a combination of features taken together and not to the individual features of the patent claims, because the sole claim amendment added such combination of features simultaneously.

⁵It is noted that MPEP 1412.02, page 1400-20, column 2, states that, where AB was amended to yield ABC to distinguish over applied prior art, reissue claim ABC_{broadened} does not

An MPEP example in accord with *Eggert* involves C added to AB to provide ABC to patentably define over the prior art. The MPEP states that a reissue claim omitting B and adding Z to yield ACZ does not involve recapture. See, MPEP 1400-20, column 2. From this example, it is clear that the MPEP recognizes that a complete element of the surrendered subject matter AB may be omitted and still avoid recapture.

Eggert states that recapture is avoided in circumstances where the reissue claims are germanely narrowed in respects other than those in which the reissue claims are broadened. Further, *Eggert* recognizes that recapture does not occur when the reissue claims are germanely narrowed by reciting overlooked aspects of the invention, and that the patentee may obtain through reissue a scope of protection to which he is rightfully entitled for such overlooked aspects (See, *Eggert*, page 29).

In the present case, the reissue claims contain narrowings that are germane to the elements of original claim 1 in the parent application and the issued patent claims, and that are directed to

constitute recapture, citing *Eggert* but without identifying any particular page(s) thereof. Thus, the MPEP takes the position that under *Eggert*, if C is amended/argued to define over applied art, C may be broadened but may not be completely removed. But, again, the Appellants submit that the MPEP's prohibition of complete removal of element C is contrary to the rule of *Eggert* and particularly, *Eggert's* example ABCX.

overlooked aspects of the invention that were never claimed in the original application.⁶ The numerous narrowing features of the present reissue claims were not recited in any of the original or patent claims and thus are overlooked aspects of the invention. Specifically, as pointed out in the Main Brief, there are numerous aspects of germane narrowing of the converging means with the aberration correction feature of this invention. For convenience, the germane narrowings of the present reissue claims are set forth in Appendix I hereto. Each of these specific narrowing features was never recited in any claim during prosecution of the original patent and thus constitutes overlooked subject matter or embodiments.

Thus, the Appellants are entitled to obtain the present reissue claims which are directed to overlooked subject matter or embodiments in the original application. The above-noted numerous

⁶To the extent that Appellants' Main Brief may have advanced legal analysis different from that of *Eggert*, the Appellants' prior statements are withdrawn. Specifically, the Appellants' prior statements concerning possible germane broadening aspects of the present reissue claims focus on broadening relative to the features of the patent claims that were not in original claim 1, rather than broadening of the features of original canceled claim 1; such prior statements are withdrawn. Further, to the extent that *Eggert* illuminates the Federal Circuit decisions in a way different from that set forth in Appellants' main Brief, the Appellants withdraw the interpretation of Federal circuit law set forth in the main Brief.

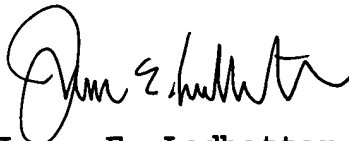
aspects of material narrowing are more than sufficient to avoid recapture estoppel.

For at least the above reasons, it is submitted that the present reissue claims are not barred by recapture estoppel.

IV. CONCLUSION

For the reasons set forth herein, in the Main Brief, and in the first Reply Brief, the Appellants respectfully request this honorable Board to reverse the pending recapture rejections.

Respectfully submitted,



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Appendix I

Claim 26 Germane narrowing

Claim 26 includes germane narrowing of the system for converging the light flux and the system for performing aberration correction. Claim 26 also defines a preamble that is different from the preamble of canceled claims 1 and 6, as well as all patent claims, in that claim 26 defines an optical recording/reproducing apparatus as recording, reproducing or erasing an information signal onto/from any one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said first layer being transparent and a second layer for storing information.

The germane narrowing of the system for converging the light flux and the system for performing aberration correction is as follows.

Claim 26 recites a converging means for converging said light flux on said second layer of one of the N optical discs through said first layer as a light spot and for performing aberration correction at said light spot, wherein when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said converging means converges the light spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of the light spot converged by said converging means on the second layer of said second disc.

In their converging means, canceled claims 1 and 6, and the patent claims, do not recite (1) converging said light flux as a light spot and performing aberration correction at said light spot, or (2) when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said converging means converges the light spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of the light spot converged by said converging means on the second layer of said second disc. Claim 26 further recites (3) a thickness of each of said first layers of said N types of optical discs is about 1.2mm or less. Neither canceled claim 1 nor 6, nor any of the patent claims, recites this subject matter.

These are all narrowing aspects germane to the prior art rejection. Thus, recapture is avoided.

Claim 29

Claim 29 depends from claim 26 and thus its narrowing aspects are the same as claim 26. Claim 29 has further germane narrowing

in that it defines said converging means as converging the light flux in accordance with the relation $D \propto \lambda/NA$ where D is the diameter of the light spot, λ is the wavelength of the light flux emitted by said light emitting means, and NA is the numerical aperture of the optical disc loaded in said apparatus.

Claim 30

Claim 30 depends from claim 26 and its narrowing aspects are the same as claim 26. Claim 30 has further germane narrowing in that it defines said first disc as being of a higher recording density than that of said second disc.

Claim 31

Claim 31 depends from claim 26 and its narrowing aspects are the same as claim 28. Claim 31 has further germane narrowing in that it defines said light spot diameters are about 2.1 μm or less.

Claim 32

Claim 32 depends from claim 26 and its narrowing aspects are the same as claim 26.

Claim 33 Germane Narrowing

Claim 33 includes germane narrowing of the system for converging the light flux and the system for performing aberration correction. Claim 33 also defines a preamble that is different from the preamble of canceled claims 1 and 6, as well as all patent claims, in that claim 33 defines an optical recording/reproducing apparatus as recording, reproducing or erasing an information signal onto/from any one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said first layer being transparent and a second layer for storing information.

The germane narrowing of the system for converging the light flux and the system for performing aberration correction is as follows.

Claim 33 recites a converging means for converging said light flux on said second layer of one of the N optical discs through said first layer as a light spot and for performing aberration correction at said light spot, wherein when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said converging means converges the light spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of the light spot converged by said converging means on the second layer of said second disc.

In their converging means, canceled claims 1 and 6, and the patent claims, do not recite (1) converging said light flux as a light spot and performing aberration correction at said light spot, or (2) when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said converging means converges the light spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of the light spot converged by said converging means on the second layer of said second disc. Claim 33 further recites (3) a thickness of each of said first layers of said N types of optical discs is about 1.2mm or less. Neither canceled claim 1 nor 6, nor any of the patent claims, recites this subject matter.

Additionally, claim 33 recites (1) a signal processing means, responsive to one of (i) a reproduction signal, corresponding to the information signal, from the photo detecting means and (ii) receipt of recording data, corresponding to the information signal, for recording on the disk, for generating an output signal corresponding to the information signal for performing one of a reproducing operation and a recording operation; and (2) a system controlling means coupled to the signal processing means for controlling generation of the output signal of the signal processing means. These are also narrowing aspects germane to the prior art rejection. Thus, recapture is avoided due to these further germane narrowing aspects.

Claim 34

Claim 34 depends from claim 33 and thus its narrowing aspects are the same as claim 33. Claim 34 has further germane narrowing in that it defines said converging means as converging the light flux in accordance with the relation $D \propto \lambda/NA$ where D is the diameter of the light spot, λ is the wavelength of the light flux emitted by said light emitting means, and NA is the numerical aperture of the optical disc loaded in said apparatus.

Claim 35

Claim 35 depends from claim 33 and its narrowing aspects are the same as claim 33. Claim 35 has further germane narrowing in that it defines said first disc as being of a higher recording density than that of said second disc.

Claim 36

Claim 36 depends from claim 33 and its narrowing aspects are the same as claim 33. Claim 36 has further germane narrowing in that it defines said light spot diameters are about 2.1 μm or less.

Claim 37

Claim 37 depends from claim 33 and its narrowing aspects are the same as claim 33.

Claim 38 Germane narrowing

Claim 38 includes germane narrowing of the system for converging the light flux and the system for performing aberration correction. Claim 38 also defines a preamble that is different from the preamble of canceled claims 1 and 6, as well as all patent claims, in that claim 38 defines an optical recording/reproducing apparatus as recording, reproducing or erasing an information signal onto/from any one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said first layer being transparent and a second layer for storing information.

The germane narrowing of the system for converging the light flux and the system for performing aberration correction is as follows.

Claim 38 recites a converging optical system including a first converging means and a second converging means, said converging optical system for converging, by employing one of said first converging means and said second converging means, a light flux on said second layer of one of said N types of optical discs and for performing aberration correction at said light flux, wherein when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said one of said first converging means and said second converging means, which is employed by said converging optical system, converges the light flux to a spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of a light spot converged by the other of said first converging means and said second converging means, which is employed by said converging optical means, on the second layer of said second disc.

In their converging means, canceled claims 1 and 6, and the patent claims, do not recite (1) converging said light flux as a light spot and performing aberration correction at said light spot, or (2) when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said one of said first converging means and said second converging means, which is employed by said converging optical system, converges the light flux to a spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of a light spot converged by the other of said first converging means and said

second converging means, which is employed by said converging optical means, on the second layer of said second disc. Claim 38 further recites (3) a thickness of each of said first layers of said N types of optical discs is about 1.2mm or less. Neither canceled claim 1 nor 6, nor any of the patent claims, recites this subject matter.

These are all narrowing aspects germane to the prior art rejection. Thus, recapture is avoided.

Claim 39

Claim 39 depends from claim 38 and thus its narrowing aspects are the same as claim 38. Claim 39 has further germane narrowing in that it defines said converging means as converging the light flux in accordance with the relation $D \propto \lambda/NA$ where D is the diameter of the light spot, λ is the wavelength of the light flux emitted by said light emitting means, and NA is the numerical aperture of the optical disc loaded in said apparatus.

Claim 40

Claim 40 depends from claim 38 and its narrowing aspects are the same as claim 38. Claim 40 has further germane narrowing in that it defines said first disc as being of a higher recording density than that of said second disc.

Claim 41

Claim 41 depends from claim 38 and its narrowing aspects are the same as claim 38. Claim 41 has further germane narrowing in that it defines said light spot diameters are about 2.1 μm or less.

Claim 42

Claim 42 depends from claim 38 and its narrowing aspects are the same as claim 38.

Claim 43 Germane Narrowing

Claim 43 includes germane narrowing of the system for converging the light flux and the system for performing aberration correction. Claim 43 also defines a preamble that is different from the preamble of canceled claims 1 and 6, as well as all patent claims, in that claim 43 defines an optical recording/reproducing apparatus as recording, reproducing or erasing an information signal onto/from any one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said first layer being transparent and a second layer for storing information.

The germane narrowing of the system for converging the light flux and the system for performing aberration correction is as follows.

Claim 43 recites a converging optical system including a first converging means and a second converging means, said converging optical system for converging, by employing one of said first converging means and said second converging means, a light flux on said second layer of one of said N types of optical discs and for performing aberration correction at said light flux, wherein when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said one of said first converging means and said second converging means, which is employed by said converging optical system, converges the light flux to a spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of a light spot converged by the other of said first converging means and said second converging means, which is employed by said converging optical means, on the second layer of said second disc.

In their converging means, canceled claims 1 and 6, and the patent claims, do not recite (1) converging said light flux as a light spot and performing aberration correction at said light spot, or (2) when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said one of said first converging means and said second converging means, which is employed by said converging optical system, converges the light flux to a spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of a light spot converged by the other of said first converging means and said second converging means, which is employed by said converging optical means, on the second layer of said second disc. Claim 43 further recites (3) a thickness of each of said first layers of said N types of optical discs is about 1.2mm or less. Neither canceled claim 1 nor 6, nor any of the patent claims, recites this subject matter.

Additionally, claim 43 recites (1) a signal processing means, responsive to one of (i) a reproduction signal, corresponding to the information signal, from the photo detecting means and (ii) receipt of recording data, corresponding to the information signal, for recording on the disk, for generating an output signal corresponding to the information signal for performing one of a reproducing operation and a recording operation; and (2) a system controlling means coupled to the signal processing means for controlling generation of the output signal of the signal

processing means. These are also narrowing aspects germane to the prior art rejection. Thus, recapture is avoided due to these further germane narrowing aspects.

Claim 44

Claim 44 depends from claim 43 and thus its narrowing aspects are the same as claim 43. Claim 44 has further germane narrowing in that it defines said converging means as converging the light flux in accordance with the relation $D \propto \lambda/NA$ where D is the diameter of the light spot, λ is the wavelength of the light flux emitted by said light emitting means, and NA is the numerical aperture of the optical disc loaded in said apparatus.

Claim 45

Claim 45 depends from claim 43 and its narrowing aspects are the same as claim 43. Claim 45 has further germane narrowing in that it defines said first disc as being of a higher recording density than that of said second disc.

Claim 46

Claim 46 depends from claim 43 and its narrowing aspects are the same as claim 43. Claim 46 has further germane narrowing in that it defines said light spot diameters are about 2.1 μm or less.

Claim 47

Claim 47 depends from claim 43 and its narrowing aspects are the same as claim 43.

Claim 48 Germane Narrowing

Claim 48 includes germane narrowing of the system for converging the light flux and the system for performing aberration correction. Claim 48 also defines a preamble that is different from the preamble of canceled claims 1 and 6, as well as all patent claims, in that claim 33 defines an optical recording/reproducing apparatus as recording, reproducing or erasing an information signal onto/from any one of N types (where $N \geq 2$) of optical discs having first layers of different thicknesses, each type of said optical discs having at least said first layer being transparent and a second layer for storing information.

The germane narrowing of the system for converging the light flux and the system for performing aberration correction is as follows.

Claim 48 recites a converging means for converging said light flux on said second layer of one of the N optical discs through

said first layer as a light spot and for performing aberration correction at said light spot, wherein when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said converging means converges the light spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of the light spot converged by said converging means on the second layer of said second disc.

In their converging means, canceled claims 1 and 6, and the patent claims, do not recite (1) converging said light flux as a light spot and performing aberration correction at said light spot, or (2) when the first layer of a first disc of said N optical discs has a thickness (d1) smaller than a thickness (d2) of the first layer of a second disc of said N optical discs, said converging means converges the light spot on the second layer of said first disc with a diameter (D1) smaller than a diameter (D2) of the light spot converged by said converging means on the second layer of said second disc. Claim 48 further recites (3) a thickness of each of said first layers of said N types of optical discs is about 1.2mm or less. Neither canceled claim 1 nor 6, nor any of the patent claims, recites this subject matter.

Additionally, claim 48 recites a signal processing apparatus including (1) a signal processing means, responsive to one of (i) a reproduction signal, corresponding to the information signal, from the photo detecting means and (ii) receipt of recording data, corresponding to the information signal, for recording on the disk, for generating an output signal corresponding to the information signal for performing one of a reproducing operation and a recording operation; and (2) a system controlling means coupled to the signal processing means for controlling generation of the output signal of the signal processing means. These are also narrowing aspects germane to the prior art rejection. Thus, recapture is avoided due to these further germane narrowing aspects.